DRAFT
UEP 254 Quantitative Reasoning
Spring 2010

Professors:
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Meeting Schedule:
Section 1: Monday/Wednesday 10:30-11:45am, Anderson 208
Section 2: Tuesday 1:30-4pm, Anderson 211

Office Hours:
Tuesday 12:30-1:30: 72 Professor's Row Classroom (with Eugen)
Wednesday 12:30-4:30: 72 Professor's Row Classroom (with Sherise)
Thursday 1:20-4:20pm: Eaton 208 Computer Lab (with Eugen)
By appointment: Mary or Marji

Course Description
This course promotes critical thinking through the use of statistics. Basic data analysis tools relevant to research, thesis work, and policy analysis are explored. This includes but is not limited to the collection of data, graphical analysis of statistical trends, and methods of data analysis. Students will gain proficiency in a statistical software package, namely STATA, as well as explore alternatives such as SPSS. The goal of this course is to promote statistical literacy among students, including the ability to fully comprehend basic statistics represented in academic journal articles and interpret statistical tables. This course will also prepare students for more advanced coursework in statistics. Although principles of calculus and linear algebra provide the backbone to all statistical concepts and methods, this course will not be heavily reliant on math. However, basic math skills at the level of college algebra are assumed.

Required Textbook and Statistical Software
Statistics: Principles and Methods, 5th Edition 2006, by Johnson and Bhattacharyya, is the required textbook for this course and can be purchased in the university bookstore or online (note that it is the book with the penguins on the cover). Additional readings will be made available on the course website as necessary throughout the semester. The course will use the statistical software STATA 11, which is available for free on the lab computers in Eaton 208. However, individual copies can be purchased through the university for as low as $48 and I encourage students to consider that option (http://www.stata.com/order/new/edu/gradplans/gp-campus.html).

Course Website

A website has been developed for this class that will provide student access to general course information, handouts, supplemental readings, homework sets, datasets, and other materials throughout the semester. It can be accessed from http://blackboard.tufts.edu. Follow the instructions on the website for Tufts students to obtain your username and password.

Grading Policy

Please be aware that you need to obtain a grade of B- or better in order to successfully complete this quantitative core course as required by the UEP MA and MPP programs. Grades will be based on a series of problem sets and take-home exams. The problem sets must be submitted as a hardcopy in class on the day in which they are due (without exception). You are urged to join a study group and work on homework sets together. However, please submit answers that reflect your own understanding of the problem. You may not work together on the take-home exams.

Grade Distribution

Assignment	**% of Grade**
Problem Sets	(10%*4) 40%
Take-Home Exams	(30%*2) 60%
Total	100%

Course Schedule (Section 1)

Date	Topic	Reading	Assignment Due
January 26	Introduction to Statistics	Chapter 1	
February 2	Descriptive Statistics	Chapter 2	
February 9	Descriptive Statistics	Chapter 2	
February 16	Normal Distribution and Central Limit Theorem	Chapters 6-7	Problem Set #1
February 23	Confidence Intervals	Chapters 8	Problem Set #2
March 2	Hypothesis Testing	Chapters 9	
March 9	Two-Sample Comparisons	Chapter 10	Problem Set #3
March 16	Chi-square Test	Readings on website	Take-Home Exam
March 30	ANOVA	Readings on website	
April 6	Correlation	Chapter 3	Problem Set #4
April 13	Simple Regression	Chapter 11	
April 20	Multiple Regression	Chapter 12	
April 27	Overview of Research Methods and Introduction of Advanced Topics	Readings on website	Take Home Exam

Course Schedule (Section 2)

Date	Topic	Reading	Assignment Due
January 25	Introduction to Statistics	Chapter 1	
January 27	Introduction to Statistics	Chapter 1	
February 1	Descriptive Statistics	Chapter 2	
February 3	Descriptive Statistics	Chapter 2	
February 8	Descriptive Statistics	Chapter 2	
February 10	Descriptive Statistics	Chapter 2	
February 17	Normal Distribution and Central Limit Theorem	Chapters 6-7	Problem Set #1
February 18*	Normal Distribution and Central Limit Theorem	Chapters 6-7	
February 22	Confidence Intervals	Chapters 8	Problem Set #2
February 24	Confidence Intervals	Chapters 8	
March 1	Hypothesis Testing	Chapters 9	
March 3	Hypothesis Testing	Chapters 9	
March 8	Two-Sample Comparisons	Chapter 10	Problem Set #3
March 10	Two-Sample Comparisons	Chapter 10	
March 15	Chi-square Test	Readings on website	Take-Home Exam
March 17	Chi-square Test	Readings on website	
March 29	ANOVA	Readings on website	
March 31	ANOVA	Readings on website	
April 5	Correlation	Chapter 3	
April 7	Correlation	Chapter 3	Problem Set #4
April 12	Simple Regression	Chapter 11	
April 14	Simple Regression	Chapter 11	
April 21	Multiple Regression	Chapter 12	
April 26	Multiple Regression	Chapter 12	
April 28	Overview of Research Methods	Readings on website	
May 3	Introduction to Advanced Topics	Readings on website	Take Home Exam

*Monday schedule substituted on Thursday